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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

SHINGLES, KRISTIE D

ART UNIT PAPER NUMBER

2141

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,339

Applicant(s)

ROLIA, JEROME

Examiner

Kristie Shingles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-12,14-21,23-26 and 28-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12,14-21,23-26 and 28-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

*Per Applicant's Request for Continued Examination
Claims 1, 4-6, 12, 20, 23-25 and 31 have been amended.
Claims 3, 8, 13, 22 and 27 have been cancelled.*

Claims 1, 2, 4-12, 14-21, 23-26 and 28-35 are pending.

CONTINUED EXAMINATION UNDER 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/5/2006 has been entered.

RESPONSE TO ARGUMENTS

2. Applicant's arguments with respect to claims 1, 12, 20 and 31 have been considered but are moot in view of the new ground(s) of rejection.

CLAIM REJECTIONS - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1 - 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Mangipudi et al* (US 6,728,748) in view of *Bigus* (US 5,745,652).

a. **Per claim 1**, *Mangipudi et al* teach the method of resource allocation comprising:

a) calculating a plurality of demand values for a plurality of components, wherein said plurality of demand values is calculated from a combination of throughput and utilization metrics (col.4 line 66-col.5 line 23, col.11 line 48-col.12 line 41—performance attributes are collected from the server resources comprising total hits per second, CPU usage and response time);

c) responding to conditions as represented by said plurality of response time metrics when at least one of said plurality of response time metrics does not satisfy at least one of a plurality of service level objectives to determine a new effective distribution of computational resources throughout said plurality of components such that said plurality of components that are modeled satisfies said plurality of service level objectives (col.13 line 22-53—determines if the performance metrics of the servers satisfy the service level agreement metrics for a particular class, if the service level metric is not within the acceptable range then the policy engine rebalances the cluster); and

d) allocating computational resources throughout said plurality of components to reflect said new effective distribution (col.13 lines 53-62).

Yet *Mangipudi et al* fail to explicitly teach predicting a plurality of response time metrics for said plurality of components based on said plurality of demand values and modeling said plurality of components based on an objective function. However *Bigus* teaches modeling the system's resources according to the resource's performance data and predicting the system's response by performing simulation using a range of workload parameters and configurations including the expected workloads (col.3 lines 3-34, col.6 lines 33-45, col.7 lines 3-13, col.8 lines 2-21, col.9 lines 7-59). It would have been obvious to one of ordinary skill in the art at the time

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the invention was made to combine the teachings of *Mangipudi et al* and *Bigus* for the purpose of implementing a model of the resources' parameters in order to visually produce the performance metrics of the resources while allowing for predictive performance metrics to be generated for the resource, in order to simulate the possible behavior of the resources and thus determine how the resources should be allocated or adjusted in order to satisfy the service objective.

b. **Claims 12, 20 and 31** contain limitations that are substantially similar to claim 1 and are therefore rejected under the same basis.

c. **Per claim 2**, *Mangipudi et al* and *Bigus* teach the method of claim 1, *Bigus* further teaches wherein said plurality of components comprise an application environment (col.1 lines 34-40, col.6 lines 33-53; *Mangipudi et al*: col.6 lines 4-10, col.14 lines 25-48).

d. **Claim 21** is substantially similar to claim 2 and is therefore rejected under the same basis.

e. **Per claim 4**, *Mangipudi et al* and *Bigus* teach the method of claim 1, *Mangipudi et al* further teach wherein said at least one of a plurality of service level objectives applies to said plurality of components on a system-wide basis (col.6 lines 25-41, col.9 lines 39-55; *Bigus*: Abstract, col.7 lines 54-57).

f. **Claim 23** is substantially similar to claim 4 and is therefore rejected under the same basis.

g. **Per claim 5**, *Mangipudi et al* and *Bigus* teach the method of claim 1, *Bigus* further teaches wherein said at least one of a plurality of service level objectives applies to said

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plurality of components on a subsystem basis (Abstract, col.10 lines 22-35; *Mangipudi et al.*: col.10 lines 27-45, col.13 lines 34-47).

h. **Claim 24** is substantially similar to claim 5 and is therefore rejected under the same basis.

i. **Per claim 6**, *Mangipudi et al* and *Bigus* teach the method of claim 1, *Mangipudi et al* further teach wherein said at least one of a plurality of service level objectives applies to one of said plurality of components (col.7 lines 25-29, col.9 lines 39-64, col.13 lines 30-56, col.14 lines 25-37 and 49-60; *Bigus*: Abstract, col.9 lines 53-65, col.10 lines 30-35).

j. **Claim 25** is substantially similar to claim 6 and is therefore rejected under the same basis.

k. **Per claim 7**, *Mangipudi et al* and *Bigus* teach the method of claim 1, *Bigus* further teaches wherein a) further comprises: receiving a plurality of metric values from said plurality of components, said plurality of metric values used to calculate said demand values (col.7 lines 1-6; *Mangipudi et al.*: col.4 line 66-col.5 line 23, col.11 line 48-col.12 line 41).

l. **Claim 26** is substantially similar to claim 7 and is therefore rejected under the same basis.

m. **Per claim 9**, *Mangipudi et al* and *Bigus* teach the method of claim 1, *Bigus* further teaches wherein c) comprises: inputting said plurality of demand values into a predictive model to determine said new effective distribution of computational resources (col.3 lines 3-34, col.6 lines 33-45, col.7 lines 3-13, col.8 lines 2-21, col.9 lines 7-59).

n. **Claims 17, 19, 28 and 33** are substantially similar to claim 9 and are therefore rejected under the same basis.

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o. **Per claim 10**, *Mangipudi et al* and *Bigus* teach the method of claim 1, *Mangipudi et al* further teach wherein d) comprises: removing computational resources from said plurality of components (col.10 lines 51-56, col.11 lines 42-46, col.12 lines 49-52, col.14 lines 45-48).

p. **Claims 15 and 29** are substantially similar to claim 10 and are therefore rejected under the same basis.

q. **Per claim 11**, *Mangipudi et al* and *Bigus* teach the method of claim 1, *Mangipudi et al* further teach wherein d) comprises: adding computational resources to said plurality of components (col.13 lines 51-56, col.14 lines 38-44).

r. **Claims 16 and 30** are substantially similar to claim 11 and are therefore rejected under the same basis.

s. **Per claim 14**, *Mangipudi et al* and *Bigus* teach the method of claim 12, *Mangipudi et al* further teach wherein d) further comprises: determining a plurality of optimum numbers of computational resources, one for each of said plurality of components, that represents said new effective distribution of computational resources (col.7 lines 25-55, col.13 lines 20-22 and 51-59; *Bigus*: col.3 lines 22-34).

t. **Per claim 18**, *Mangipudi et al* and *Bigus* teach the method of claim 12, *Mangipudi et al* further teach wherein said plurality of metric values include throughput metrics and utilization metrics (col.4 line 66-col.5 line 23, col.11 line 48-col.12 line 41; *Bigus*: col.3 lines 9-17).

u. **Claim 32** is substantially similar to claim 18 and is therefore rejected under the same basis.

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v. **Claim 34** is substantially similar to claims 10 and 11 and is therefore rejected under the same basis.

w. **Per claim 35**, *Mangipudi et al* and *Bigus* teach the network of claim 31, *Mangipudi et al* further teach the network wherein said plurality of components comprise a local area network (LAN) (col.7 lines 18-20).

CONCLUSION

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Chu et al (5,367,473), Graupner et al (7,054,934), Goldszmidt et al (7,054,943), Liao et al (2004/0136379), Ellessen et al (6,459,682), Bigus et al (6,718,358), MacLellan et al (6,591,262), Mei et al (7,000,013), Chaar et al (6,857,020).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00pm.

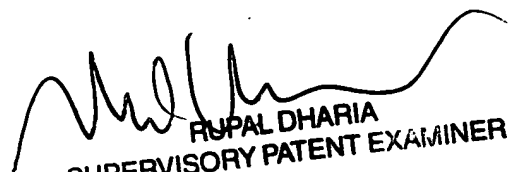
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
Art Unit 2141

kds


RUPAL DHARIA
SUPERVISORY PATENT EXAMINER